Installation Guide to

VXL*30

The 68030 Accelerator Device for the Amiga® 500

from

MicroBotics, Inc.

1251 American Parkway, Richardson, Texas 75081
(214)-437-5330 (Central Time Zone, 1000 to 1800 hrs.)
"VXL-30" is MicroBotics' trade name for its 68030 Accelerator for the Amiga 500;
"Amiga" and "Amiga 2000" are registered trademarks of Commodore/Amiga
COPYRIGHT 1991, MICROBOTICS, INC., ALL RIGHTS RESERVED

STARTING INSTRUCTIONS

Do NOT install the board in your computer before first carefully reading through this entire Installation Guide. Work on a table large enough to support your Amiga with ample space left over to work on VXL-30. Make sure the lighting is very good.

CAUTION: Installing your VXL-30 in an Amiga requires you to open your Amiga. Although numerous Amiga peripherals require you to do this, doing so may void the Commodore warranty on your Amiga. If you have any degree of uncertainty about your ability to successfully open your Amiga and install your VXL-30, you should have the installation done by your Amiga dealer.

Your dealer may impose a labor charge for installation, but this may well be worth it to avoid the risk of damaging your computer or your VXL-30. If you decide to do the installation yourself, proceed slowly and carefully when opening your Amiga. Take precautions to properly ground yourself before touching any electronics to avoid static damage to components on the Amiga and on VXL-30. Proceed slowly and cautiously when removing and inserting chips and VXL-30 itself. MicroBotics cannot assume any responsibility for damage that you may do to your Amiga or to the VXL-30 product.

Tools Needed:

1. A medium flat, thin-bladed screw driver
2. Torx T-10 key (supplied with VXL-30; Amiga 500 only)
3. A #2 (medium) phillips screw driver (Amiga 2000 only)
4. Small needle nosed pliers
5. Small cup or container to temporarily hold screws

TAKING APART YOUR AMIGA

Turn off your Amiga. Unplug the power cable and any other cables connected to the ports, including the mouse. Remove all peripherals from the Amiga and your worktable. All that should be in front of you is the Amiga itself.

FOR THE AMIGA 500

(skip to Step 11 if you have a 2000)

STEP 1: Flip your Amiga 500 over on its face (keyboard side down) with the front edge still towards you.

STEP 2: Use the Torx tool to remove the three Torx screws on the front edge of the base of the machine. Put the screws aside in a cup.

STEP 3: Use the Torx tool to remove the three Torx screws located on the back edge of the machine (on the lip of plastic above the ports). Put the screws aside.
IMPORTANT: DO NOT REMOVE ANY OTHER SCREWS ON THE OUTSIDE OF THE CASE !

STEP 4: Firmly clamp together with your hands, the top and bottom shells of the Amiga case, on both sides in line with the keyboard. Then, holding the system together with your hands, turn it back right side up with the keyboard towards the front, facing you. NOTE: while you perform this maneuver, the only thing holding the keyboard in the system is your hand pressure, so do it carefully or you'll drop the keyboard.

STEP 5: Lift the top plastic shell off your Amiga 500.

CAUTION: The edges of the bright-metal shielding on the Amiga are very sharp. Proceed with care and avoid cutting yourself on these metal edges.

STEP 6: The bundle of wires leading from the keyboard to a rectangular hole in the middle of the shielding has a rectangular plastic connector at its end. Unplug this from the motherboard by reaching into the hole and gripping the connector with two fingers. Pull straight up.

STEP 7: Do NOT try to remove the silvery grounding strap on the right side of the keyboard. Just lift the keyboard up carefully and swing it to the right and out of your way.

STEP 8: Using the flat-bladed screwdriver, bend up (straight) the four metal tabs on the metal shielding. One of these tabs is on the left side near the back, and the other three are just in front of the disk drive housing. Do *not* try to bend back these tabs with your fingers. Use a pliers.

STEP 9: Use the Torx tool to remove the four screws on the shielding. There are two in front and two on the left side, adjacent to the expansion bus connector.

STEP 10: Lift off the metal shielding and put it aside. Note that there is a second, smaller piece of shielding under the main shield, around the expansion bus connector.

FOR THE AMIGA 2000

(Skip to Step 18 if you have an Amiga 500)

STEP 11: Remove the five case screws using the phillips screwdriver. There are two on each side of the case and one high on the back, in the middle in an oblong hole. Store the screws in a cup temporarily.

STEP 12: Remove the top of the case (sliding it forward). Watch out for the screw tab in the center rear of the case so as to avoid snagging wires as you slide the top off.

STEP 13: Remove any cards installed in the slots near the power supply so that you will have ample room to work.

STEP 14: Remove the power cable connector (big oblong, white connector) from the motherboard and remove the floppy interface connector from the motherboard. Make a note on paper of how these connectors attach to the motherboard and their orientation so that you can later put them back correctly. Look closely at how the motherboard power connector is clipped onto the motherboard by a plastic spring; care is required to release the connector.

STEP 15: Unscrew the three screws that hold the power supply/drive platform to the front of the case (one on the left side; two on the bottom edge).

STEP 16: Unscrew the four screws that hold the power supply/ drive platform to the rear of the case.

STEP 17: Grasp the power supply/drive platform with both hands and lift it straight off the case. Put it aside.

REMOVING THE 68000 FROM THE MOTHERBOARD

The 68000 is the biggest rectangular chip on the motherboard. On the A500 it's directly adjacent to the expansion bus connector on the left side of the Amiga. On the 2000, it is located in the middle, towards the front of the computer directly adjacent and to the right of the co-processor slot .

STEP 18: Use the flat bladed screwdriver to slightly pry up one end of the 68000 cpu chip. Then *slightly* pry up the other end. Work alternately on either end until the chip is freed from its socket. Do not rush. Do not use excessive force. Do not pry up too much on one side at a time. When the chip is freed, handle it by its ends.

STEP 19: Note that the 68000 chip you just removed has a semicircular notch on one end. This notched end should be pointed towards the VXL-30 name imprint ("south" on the board) when you install it on VXL-30. Take the 68000 chip and line it up with the matching socket holes on VXL-30. Carefully line up all the pins on the 68000 with the appropriate socket holes on the VXL-30 board. If the legs are slightly wider apart than the socket holes on VXL-30, then partially insert all the legs on the row of socket holes closest to the edge of the board. Now press carefully on the body of the chip, on the side not yet inserted in order to slightly bend the whole row of pins already inserted to the point where the uninserted row of pins now matches up with its row of socket holes. Hold the VXL-30 board in both hands (right hand on the top edge, left hand on the bottom edge) with your thumbs on the 68000 chip and your fingers on the back of the board (do NOT rest it on the table; that might result in bending the pins on the back of the board). Lightly press down on the middle of the chip then inspect the socket holes to make absolutely certain that the pins are going into the proper holes and are not being bent. Now use firmer pressure to insert the 68000 into the VXL-30 board. Make one final visual inspection of the chip to insure that you haven't bent under any pins.

STEP 20: Examine the underside of the VXL-30. Note the two long rows of pins. Carefully line up these pins with the now empty 68000 socket on the motherboard. Let the pins just rest on the socket and then carefully examine them to make sure that they are all correctly lined up. Gently press straight down (with your fingers in the center of the row of pins on the top of the VXL-30). Stop and make sure that you're not bending any pins and that all the pins are properly lined up in the socket. Now press the VXL-30 board firmly and evenly down into the socket.

STEP 21: Note the jumper block , on VXL-30, near the 68000, labelled "CPU". If you wish to cold boot from the 68000, put this jumper on both pins, otherwise leave it in its default position (hanging off one pin) which will cause cold boot to take place using the 68030.

STEP 22: Visually inspect and determine that VXL-30 is correctly installed.

CAUTION: Make ABSOLUTELY certain that none of the components on the Amiga motherboard are touching the underside of VXL-30. This is a crucial requirement in order to avoid shorts that could destroy your computer or VXL-30. Use a flashlight to aid you in this inspection. Then restore the shielding, keyboard connector and keyboard, and plastic top on your Amiga. Store the Torx key.

MATH CHIP INSERTION

Normally, you should buy your VXL-30 with its math chip already installed. If you wish to add a math chip to VXL-30, you should buy a MicroBotics Math Chip Kit through your dealer or directly from MicroBotics, Inc. . Both 68882 and 68881 math chips with crystals are available. For economy, we suggest using a 68881 rather than the more expensive 68882. There's only about a 10 percent overall performance difference and almost a 100 percent price difference.

The polarity of the math chip is marked by the small dimple dot in the center of one edge of the square chip. This dimple must be turned towards the left side (68000 side) of the VXL-30 board. For more guidance, refer to the VXL-30 Math Chip Installation Guide packaged with the MicroBotics Math Chip kit.

IMPORTANT NOTE: the Motorola math chip package (physical connection system) used on VXL-30 is the PLCC-type, not the much more common PGA type. Do not attempt to mount a PGA math chip on VXL-30; this is not possible and you will damage your VXL-30 trying.

MicroBotics, Inc.
1251 American Parkway, Richardson, Texas 75081
(214)-437-5330 (Central Time Zone, 1000 to 1800 hrs.)
VXL-30 Documentation by Redmond Simonsen

VXL-30 ACCELERATOR

Configuration, Chip Installation, and Upgrade Notes

68000 INSTALLATION

The 68000 CPU chip from your Amiga must be re-installed onto the VXL-30 board. The chip should be oriented with its head end (notched end) pointing down. If you have trouble lining up the pins of the chip with the socket holes, you may have to straighten the legs of the chip by carefully pressing each long side of the chip against a hard flat surface at a right angle until the legs are parallel with each other.

FPU CLOCK CHIP INSTALLATION

This chip will only be found installed on VXL-30's shipped with math chips having clock speeds different from that of the CPU. Usually, the math chip and the processor are the same speed, so this socket will most often be shipped unpopulated. The "head" end of a clock chip has either a black dot or a notch on it.

FAST PAL UPGRADE

If your VXL-30 came with a 25Mhz CPU, and you wish to install a faster CPU, you must install faster PAL chips bearing numbers matching the positions marked "3","9" and "11" on the diagram. Also replace the 25Mhz CPU clock with a faster one. Move the 25Mhz clock to the FPU socket on the board. See the FPU Jumper Block instructions. A fast PAL kit including three PAL chips and a 40 or 50Mhz clock is available from MicroBotics.

COLD BOOT CPU DEFAULT

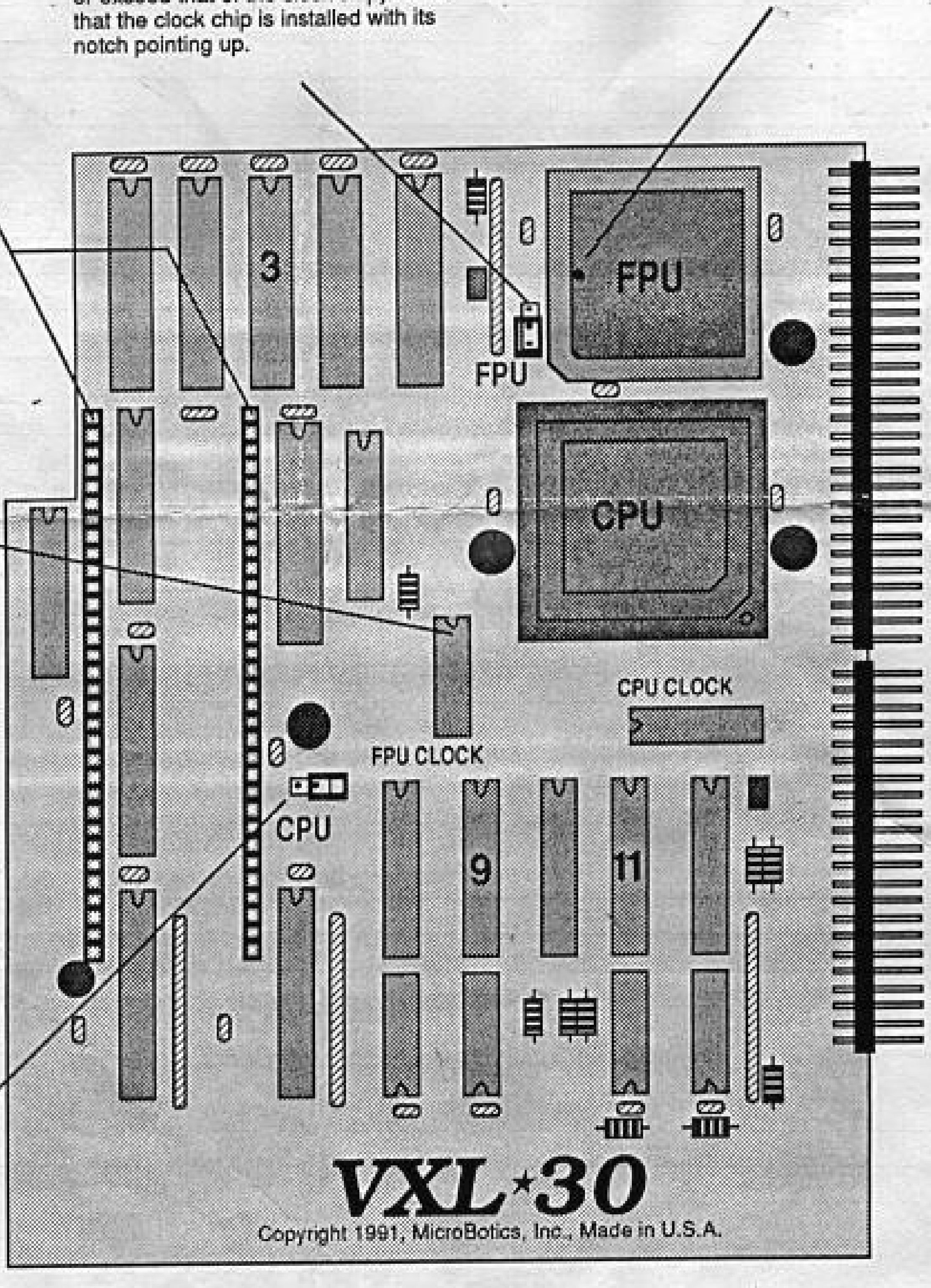
The VXL-30 board is shipped with CPU jumper OFF (hanging onto just one of the pins). This means that your Amiga will power up using the 68030. If you wish to cold boot your Amiga using the 68000, then set the jumper ON both pins.

FPU JUMPER BLOCK

Jumper on middle and lower pin (illustrated) sets FPU clockspeed to that of CPU. If FPU clock chip is installed, FPU speed is clocked by it when jumper is moved to middle and upper pins (FPU chip speed must be matched to or exceed that of the clock chip). Note that the clock chip is installed with its notch pointing up.

FPU INSTALLATION

Either a 68882 or 68881 FPU chip may be installed. The FPU chip package type MUST be PLCC (not the more common PGA type). Note the orientation of the "dimple" on the chip (pointing to the left).



MicroBotics, Inc.
1251 American Parkway, Richardson, Texas 75081 • (214)437-5330 Edition 1.3

Operating Guide to
VXL★30
The 68030 Accelerator Device for the Amiga®500
from
MicroBotics, Inc.

1251 American Parkway, Richardson, Texas 75081
(214)-437-5330 (Central Time Zone, 1000 to 1800 hrs.)
"VXL-30" is MicroBotics' trade name for its 68030 Accelerator for the Amiga 500;
"Amiga" and "Amiga 2000" are registered trademarks of Commodore/Amiga
COPYRIGHT 1991, MICROBOTICS, INC., ALL RIGHTS RESERVED

STARTING INSTRUCTIONS

Read the separate documentation titled "VXL Installation Guide". Do NOT install the board in your computer before carefully reading the entire Installation Guide. Once your VXL is installed, continue reading this Operating Guide. Also, be sure to read any supplemental documentation files on the VXL-30 distribution diskette.

GENERAL DESCRIPTION AND ORGANIZATION

VXL-30 is a high speed accelerator card which employs the Motorola 68030 or 68EC030 processor chip rated at various clock speeds from 16 mhz to 50 mhz. Also supported are the 68882 and 68881 Floating Point Units (FPU's) and the addition of 32-bit wide RAM via the optional VXL RAM-32 board.

OPERATIONAL DIFFERENCES IN PROCESSOR TYPES

The raw speed of the 68030 processor chip is measured in megahertz (mhz), that is to say, millions of processor cycles per second. VXL can support processor speeds of from 16mhz up to 50mhz. 68030's are rated (at time of manufacture) as to how fast they may be operated. The VXL standard implementation is shipped with a 25mhz 68030. The low-cost version of VXL employs the EC030 variant. Higher speed versions of VXL require an upgrade of the speed of some of the logic on the boards as well as the processor and its oscillator. Contact MicroBotics for a Processor & Logic Upgrade kit should you wish to increase the speed of your VXL-30.

The only operational difference between the EC030 and the regular 68030 is that the EC version of the chip does not have a Programmable Memory Management Unit (PMMU) built into it. As of this writing, there is no user-level applications software which uses the PMMU. The system utility program SetCPU (in the public domain) and the developer's utility Enforcer (from Commodore) are the only pieces of code of any significance which use the PMMU. As of AmigaDOS 2.04, the operating system does not use the PMMU. Note that the bulk of the installed base of Amigas have no PMMU in them nor are they capable of supporting such without replacing the standard 68000 cpu. Commodore has publicly stated that applications should *not* make specific use of the PMMU.

MATH COPROCESSORS

The Motorola Floating Point Units (FPU's) 68881 and 68882 are supported on the VXL-30. An FPU kit (consisting of the math chip and appropriate crystal) is available from MicroBotics. The operation of a properly installed math chip is transparent to the user running under AmigaDOS 1.3 or 2.0. The FPU provides a significant performance increase when running software which is computationally intense; particularly that software which makes heavy use of transcendentals and floating point math. If a math chip is installed, and if you are running VXL in 68000 mode, the FPU will *not* be available to the system. Note that there is only a minor performance difference between the older 68881 and the 68882 at the same clock speed(about 10%).

IMPORTANT: Note that the math chips compatible with VXL-30 must be in PLCC (Plastic Lead Chip Carrier) packaging style. This is different than the more common PGA (Pin Grid Array) style.

SETVXL SOFTWARE

The included software utility, SetVXL, allows you to change VXL-30's operational state as well as offering control over any attached VXL RAM. SetVXL will present you with an interactive menu when you run it (unless you suppress the menu using the NOINTER command. The following is a glossary of command-line switches to be used with SetVXL:

68000
Soft switch to the 68000 processor on automatic warm reboot of the system.

68030
Soft switch to the 68030 processor on automatic warm reboot of the system.

NOVERIFY
Do not prompt for verification before reconfiguring VXL-30 and rebooting.

NODELAY
Reboot immediately, without first waiting five seconds.

NOINTER
Suppress the interactive interface to SetVXL; use command line switches or icon tooltypes only.

MAPHIGH
If VXL-30 has 32 bit memory available, soft-map it to appear at address HEX 0800 0000 upon auto warm reboot. Should not be used with MAPLOW.

MAPLOW
If VXL-30 has 32 bit memory available *and* it is not jumpered to map high, soft map it to autoconfigure at address 0020 0000 upon auto warm reboot. Should not be used with MAPHIGH.

ADDMEM
If VXL RAM is attached and mapped high, this switch will add the memory to the free memory list (thus making it accessible to the system in 68030 mode). Does not cause autoreboot.

FASTROM
If VXL RAM is attached, copy the system ROM into 32 bit wide memory for enhanced operation. Note that no MMU is necessary to perform this operation. Does not cause auto reboot. Note also, that although it achieves the same result as the FASTROM option in SetCPU, it does so by different means. The two programs are *not* interchangeable. Do NOT call FASTROM from SetCPU unless you have an MMU. Use FASTROM from SetVXL instead.

COMMAND LINE EXAMPLES:

```
SETVXL 68000 NOVERIFY NODELAY
```

Soft-switch between from using the 68030 to the 68000 processor; auto reboot without confirmation or delay.

```
SETVXL 68030 MAPHIGH
```

Enable the 030 processor. Memory attached to VXL-30 will be mapped at a high address (hexadecimal 0800 0000) after auto rebooting.

```
SETVXL ADDMEM
```

High mapped memory attached to VXL-30 will be added to the system free memory list.

SetVXL can be used from the CLI or from the Workbench. SetVXL can accept more than one command at a time. Some commands are mutually exclusive. Some commands cause the system to reboot.

SETCPU SOFTWARE

Also included on the distribution disk is the public domain program, SetCPU. This software can be used to turn the Instruction and Data caches on and off as well as enable/ disable Burst mode if you have 32 bit memory installed. See the documentation file on the diskette for details about SetCPU.

Normally, you will want to call SetCPU in your startup sequence to turn on the 030 Instruction and Data caches. Some older software and some hardware may have trouble with data or instruction caching. If you suspect such, operate without caching as a test.

IMPORTANT NOTE: If you have VXL RAM 32 attached and if you have an EC030 installed, do NOT use the FASTROM option in SetCPU. Instead, you should use the FASTROM option in SetVXL.

TROUBLESHOOTING

Even the most reliable devices can have problems occasionally. If your VXL-30 should appear to not function properly, consider the following checklist:

1. Are your jumpers properly set?

2. Are all chips correctly installed and firmly seated in their sockets?

3. Is the VXL-30 board firmly seated in the Amiga socket?

4. Does your VXL-30 work without other peripherals attached to the Amiga?

5. Have you installed a second board in the CPU socket (this arrangement will not work reliably and MicroBotics will not support the use of VXL-30 in such an environment)?

6. If you have problems with a particular piece of software, have you discussed it with the software publisher? Have you tried running in 68000 mode?

7. Have you tried running your system without background utility software (i.e., running from an "out-of-the-box" Workbench disk without any modifications)?
8. Have you tried running your software without the Instruction or Data caches enabled? Some software is not well designed for compatibility with caching.

9. If you are using AmigaDOS Kickstart 1.3 or earlier with a 40mhz or faster VXL-30 and have occasional boot or reboot problems (system hangs) this is because Kickstart 1.3 has some timing dependencies in it that do not work well with very fast processors. This problem is cleared by installing a Kickstart 2.0 ROM in your system. The problem also clears upon a repeated reboot.

10. If you are using an Amiga 500, and it has one or a number of other peripherals drawing power from it (external floppies, ram boards, harddisks, etc.) you may need a bigger power supply if you are experiencing intermittent problems that seem to have no other logical cause.

If you have worked your way through the above checklist and are still experiencing problems, see your VXL-30 dealer. Alternatively, you may call MicroBotics Technical Support, but *only* after working through the checklist.

MicroBotics, Inc.
1251 American Parkway, Richardson, Texas 75081
(214)-437-5330 (Central Time Zone, 1000 to 1800 hrs.)
VXL-30 Documentation by Redmond Simonsen

IMPORTANT: READ BEFORE INSTALLING!

VXL-30 Upgrade Notes for Use with RAM-32

Edition 1.0

IDENTIFYING YOUR VXL-30:

Your VXL-30 board is serialized via a paper label to be found near the gold colored pins on the right side of the board. If your serial number begins with "V-3..." you do NOT need to read any further (you do not need to upgrade your VXL-30 to install RAM-32).

IF YOUR SERIAL NUMBER BEGINS WITH "V-2..." then you must install the included chip set labelled "V-2" in your VXL-30.

IF YOUR SERIAL NUMBER BEGINS WITH "V-1..." then you must install both the chip set labelled "V-2" and the chip set labelled "V-1" in your VXL-30 accelerator board.

After upgrading your VXL-30, apply the new "V-3..." serial number.

These chips (Programmable Array Logic known as "PALs") upgrade your V-2 or V-1 VXL-30 Accelerator to a V-3 revision. VXL-30's must be upgraded to V-3 status for proper operation with RAM-32 memory. NOTE: If your VXL-30 has a V-1 serial number and has NOT been subsequently serviced or upgraded by your dealer or MicroBotics AND if your RAM-32 package does NOT contain a "V-1" set, contact your dealer or MicroBotics.

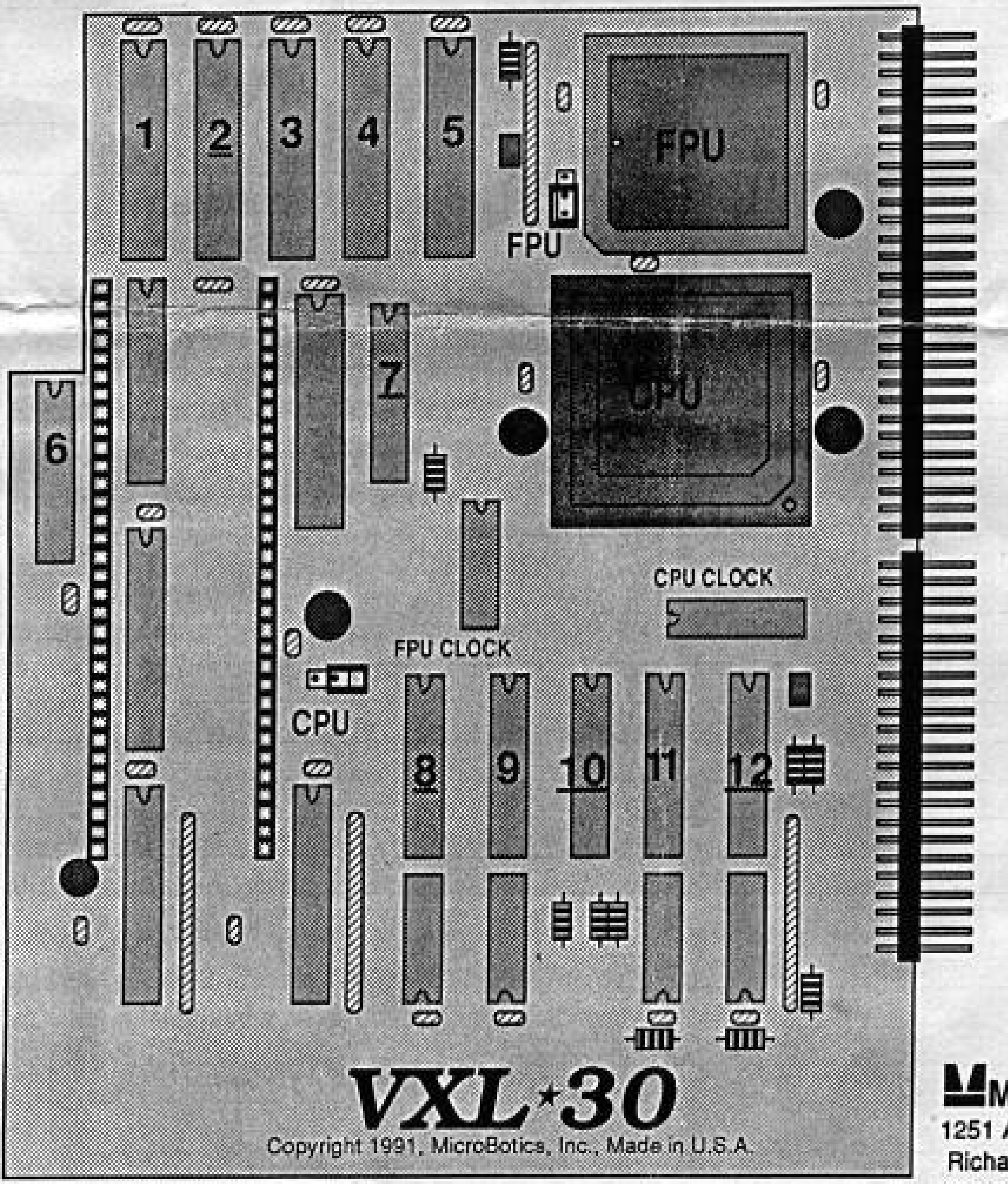
INSTALLING THE PAL UPGRADE SET

Remove your VXL-30 Accelerator from your Amiga (turn the power off first and consult your original documentation). Support the underside of the board with the pink anti-static foam and a couple of books (letting the long pins on the underside of VXL-30 fall between these supports to protect them from any pressure).

If your VXL is a V-2, you need to remove old chips numbered 2,7,10, and 12 (see the diagram). If your VXL is an unmodified V-1, you must additionally remove chips numbered numbered 3,4,5,9, and 11. Both V-1 and V-2 need PAL chip number 8 as well.

REMOVING CHIPS

Remove PAL chips using a small, flat-bladed screw driver. Carefully insert it under one end of the chip and pry up slightly. Then do the same to the other end. Alternate prying until you can lift out the chip with the length of the screwdriver blade. Remove all the old chips first and place them aside to avoid confusing them with the new chips.



INSERTING CHIPS

Carefully identify each new chip by looking at the first two digits of the number printed on the label on the chip, for example: "02-" or "07-". Use these numbers as your guide to the matching socket on the board as per the diagram. Note also, that the chips have a correct orientation in the socket as indicated by the semi-circular notch on one end. VERY IMPORTANT: you MUST get the right chips in the right sockets and have them correctly oriented otherwise your board will not work and you may damage it permanently. Insert each chip carefully and completely, making very sure that all the legs of the chip are lined up with the socket holes before firmly pressing it into its socket.

CHIP 8 AND /AS WIRE

PAL chip number 8 has a 10-inch wire attached to it. When all chips have been inserted and RAM-32 is attached, run the wire around to the underside of RAM-32 and plug the end into the small metal socket to be found near where the two boards meet, on RAM-32. This wire carries the Address Strobe signal (/AS) necessary for certain DMA disk interfaces.

MicroBotics, Inc.
1251 American Parkway
Richardson, Texas 75081
(214)437-5330 © 1992

Installation Guide to
VXL*RAM-32
32-Bit RAM Card for the VXL-30 68030 Accelerator for the Amiga® 500
from
MicroBotics, Inc.

1251 American Parkway, Richardson, Texas 75081
(214)-437-5330 (Central Time Zone, 1000 to 1800 hrs.)

"VXL-30" is MicroBotics' trade name for its 68030 Accelerator for the Amiga 500;
"Amiga" and "Amiga 2000" are registered trademarks of Commodore/Amiga
COPYRIGHT 1991, MICROBOTICS, INC., ALL RIGHTS RESERVED

STARTING INSTRUCTIONS

Do NOT install the board in your computer before first carefully reading through this entire Installation Guide. Work on a table large enough to support your Amiga with ample space left over to work on VXL-30 and RAM-32. Make sure the lighting is very good.

CAUTION: Installing your RAM-32 in an Amiga requires you to open your Amiga and remove your VXL-30 (if already installed). Although numerous Amiga peripherals require you to do this, doing so may void the Commodore warranty on your Amiga. If you have any degree of uncertainty about your ability to successfully open your Amiga and install your VXL-30 and RAM-32, you should have the installation done by your Amiga dealer.

Your dealer may impose a labor charge for installation, but this may well be worth it to avoid the risk of damaging your computer or your VXL-30. If you decide to do the installation yourself, proceed slowly and carefully when opening your Amiga. Take precautions to properly ground yourself before touching any electronics to avoid static damage to components on the Amiga and on VXL-30 and RAM-32. Proceed slowly and cautiously when removing and inserting parts. MicroBotics cannot assume any responsibility for damage that you may do to your Amiga or to the VXL-30 product.

GETTING STARTED

You will need your VXL-30 Installation documentation and the tools it recommends. Turn off your Amiga. Unplug the power cable and any other cables connected to the ports, including the mouse. Remove all peripherals from the Amiga and your worktable. All that should be in front of you is the Amiga itself.

Now thoroughly review your VXL-30 Installation Guide documentation concerning opening up your Amiga and installing your VXL-30. Also study the diagrammatic illustration of VXL-30 and RAM-32 assembled.

IMPORTANT: You will have to remove your VXL-30 from your Amiga in order to install your RAM-32 card on it. Do NOT attempt to install RAM-32 while VXL-30 is still in the Amiga: this *will* damage your VXL-30. If you have a VXL-30 with a "V-1..." or "V-2..." serial number, you will have to install new PAL chips on the VXL-30 as per the separate upgrade instruction sheet.

CAUTION: The edges of the bright-metal shielding on the Amiga 500 are very sharp. Proceed with care and avoid cutting yourself on these metal edges.

CONNECTING RAM-32 TO VXL-30

Hold VXL-30 in your left hand and RAM-32 in your right. Carefully line up the long black connector on RAM-32 with the gold-colored pins on the right edge of VXL-30. Lightly insert the pins into the connector and carefully inspect all the pins to make sure that none are missing the socket holes and/or getting bent. Then press the two boards firmly together. Hold the boards very tightly and very straight while you do this. Make sure the boards are going together evenly while you do this. Work slowly. Avoid leveraging the boards against the pins as they are joined. When fully mounted on VXL-30, there should only remain a hairline of space between the two board edges (if any). Before reinstalling the assembled VXL-30/RAM-32 in your Amiga, you should install an alternate Kickstart ROM if you have one available. If you install such a chip later on, you should once again remove the boards from the system to do it.

RAM-32 JUMPER SETTINGS

You should also now confirm that the six jumper settings as delivered on your RAM-32 board as you wish them. Factory settings reflect installed RAM. Note, the default maps RAM "low" (in the Amiga's normal system RAM space) so that it will automatically appear upon start up (this is called autoconfiguration). Mapping RAM "high" requires you to use a SetVXL ADDMEM to make the memory available. High memory cannot be accessed directly by DMA disk interfaces such as the CBM A590. The "Soft?" column indicates whether that function can also be affected by softswitches in the SetVXL software.

Nr.	Function	OFF	ON	Soft?
1	RAM Mapping	High	Low	*soft*
2	RAM Size	2 Megs	8 Megs	hard
3	Boot Kickstart ROM	Motherbd	RAM-32	*soft*
4	RAM Access Mode	No Burst	Burst	*soft*
5	RAM Speed	80ns	60ns	hard
6	CPU Speed	25Mhz	40; 50 Mhz	hard

SOFTWARE

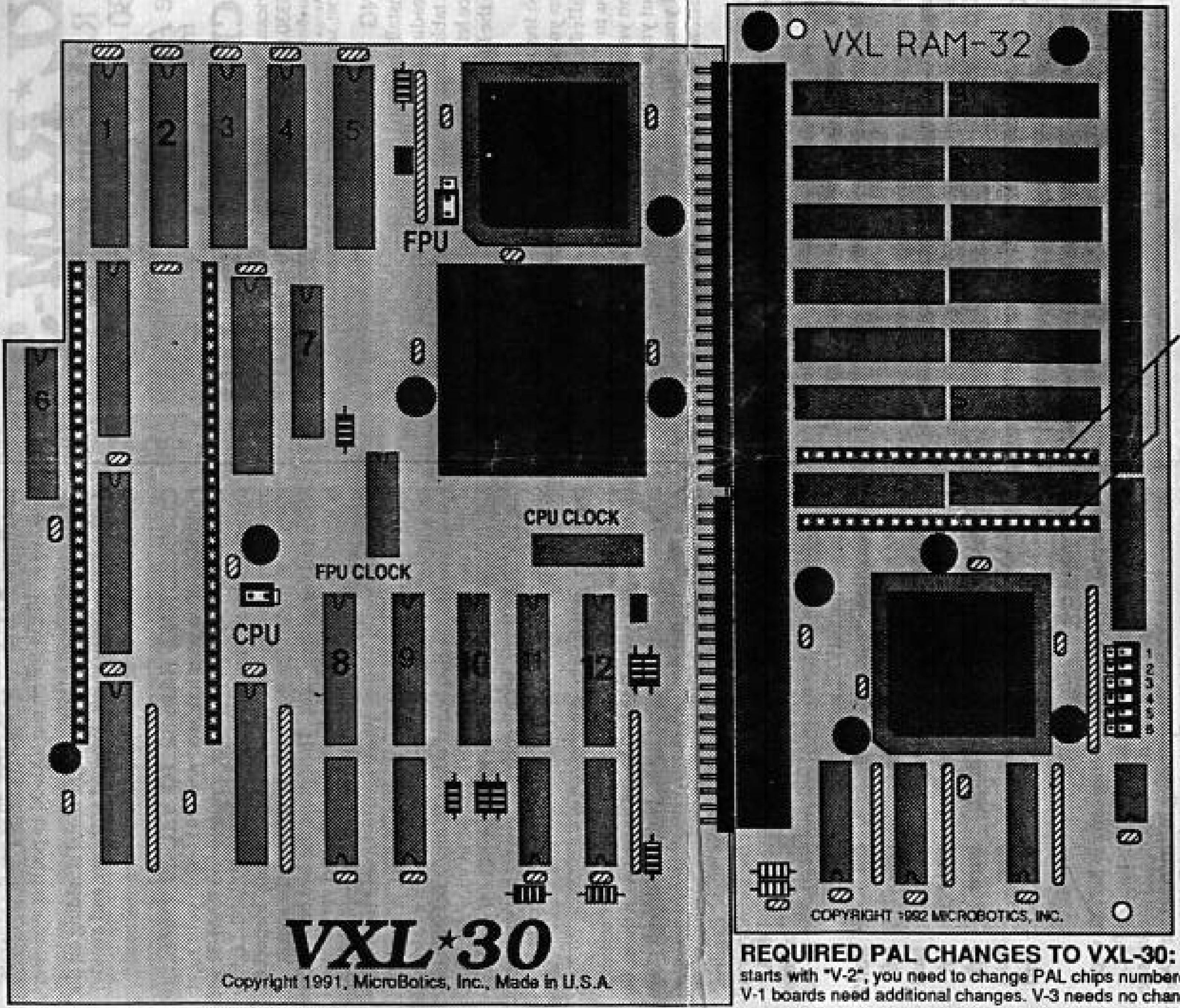
You should replace your operating copy of SetVXL with that found on the diskette included with your RAM-32. Earlier copies of the software did not have all functions enabled for RAM-32. See the operating instructions for VXL-30. A new version of MicroBotics' standard RAM test software (MBRTest-2) is included on the diskette. See the readme file on the diskette.

MicroBotics, Inc.
1251 American Parkway, Richardson, Texas 75081
(214)-437-5330 (Central Time Zone, 1000 to 1800 hrs.)

VXL-30 Documentation by Raimond Simonsen

VXL RAM-32 Installation and Configuration Diagram and Notes EDITION 1.2

VXL RAM-32 can be populated with 60ns or 80ns RAM in DIP (Dual Inline Packaging); Page Mode or Fast Page Mode (for burst) must be used. Sixteen 256x4 or sixteen 1x4 chips must be used. Chip types may not be mixed and the board must be fully populated.


1
2
3
4
5
6
7
8
9
10
11
12
FPU
CPU
FPU CLOCK
CPU CLOCK
VXL RAM-32
1
2
3
4
5
6
COPYRIGHT 1992 MICROBOTICS, INC.
VXL*30
Copyright 1991, MicroBotics, Inc., Made in U.S.A.

REPLACING RAM

If you wish to replace the factory installed RAM in VXL RAM-32, you must replace ALL of it with the same size and type of RAM. Note also the direction of the notches (or dimples) on the RAM.

KICKSTART ROM

If you want to install a Kickstart ROM in the provided socket, you must purchase the ROM through Commodore or your dealer (Note:The ROM is sold in two versions dependant upon your Amiga motherboard revision). Insert it carefully, making very sure not to bend any pins. The notched end of the ROM should point towards the VXL-30.

POWER If you have only the older, 35 watt A500 power supply powering your Amiga, you should consider replacing it with a heavier grade power supply or else reduce the number ofyour peripherals.

JUMPER SETTINGS

See the table in the Installation documentation.

STANDOFFS

RAM-32 comes with a white plastic standoff (leg) installed in the lower right and upper left corner. These legs should be replaced with longer ones if the VXL-30 is raised with a socket extension kit. To remove each leg, pinch the split head together with a pliers while pulling on the body.

REQUIRED PAL CHANGES TO VXL-30: If your VXL-30 serial number starts with "V-2", you need to change PAL chips numbered 2,7,8,10 and 12.
V-1 boards need additional changes. V-3 needs no change. See separate notes.